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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,800	03/29/2004	Sinn-Wen Chen	CHEN 3649/EM	9747
23364	7590	02/08/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			DONAHOE, CASEY D	
			ART UNIT	PAPER NUMBER
			3732	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/810,800	Applicant(s) CHEN ET AL.	
	Examiner Casey Donahoe	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 depends from claim 8. Claim 8 recites that the metallic article is a dental crown, yet claim 9 recites that the metallic article is an orthodontic archwire. It is unclear which limitation is to be considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8, 9, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US 3,422,535).

Johnson discloses a dental crown, which is anodized to provide an aesthetically pleasing color, such as gold (abstract; column 2, lines 40-47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7, 14, 15, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orikasa et al. (US 2002/0168601) in view of Pelton et al. (US 2004/0117001), Hall (US 2003/0059737), and Kendall (US 3,616,279).

Regarding claims 1-5, 7, and 18, Orikasa et al. disclose an orthodontic archwire, which may be made from β -Ti, Ni and Ti, or stainless steel (paragraph 81). Orikasa et al. fail to disclose a method for anodizing the archwire so that a color different from its original metallic gloss is achieved. Pelton et al. disclose anodizing archwires, among other medical implants, in order to provide a highly biocompatible surface, which resists corrosion (paragraphs 27, 31, 46). Hall discloses a titanium oral device, which may be anodized in order to change its color. It is well known in the dental and orthodontic fields to provide oral appliances, which may vary greatly in color according to the patient of the preference (paragraph 46). Kendall discloses a method for anodizing titanium and titanium alloys to provide a corrosion-resisting coating (column 1, line 6), which may

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very in color (including yellow, blue and green) depending on the applied voltage (according to the table of column 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to anodize the β -Ti or Ni and Ti archwire disclosed by Orikasa et al., as demonstrated possible by Kendall, in order to both improve the biocompatibility of the archwire and provide a variety of colors for the patient to choose from according to his/her preference.

Regarding claim 14, Kendall further demonstrates that it is well known to clean metallic articles before an anodizing process (column 4, lines 50-51). Furthermore, both acidic and basic electrolytic solutions are well known in the art, as disclosed by Pelton et al. (paragraph 31), therefore an acidic electrolytic solution would have been obvious to one of ordinary skill in the art at the time of the invention.

Regarding claim 15, Kendall discloses operation voltages within 5-60V.

Regarding claims 19 and 20, hydrochloric acid is well known for its use in metal cleaning, as defined by Webster's II New Riverside University Dictionary (1984). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize hydrochloric acid in the metallic cleaning process since it is a universally well known metallic cleaner.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orikasa et al. in view of Pelton et al., Hall, and Kendall as applied to claims 1-5, 7, 14, 15, and 18-20 above, and further in view of Yahalom (US 5,382,347).

Orikasa et al. discloses β -Ti and Ni-Ti archwires as described above, while Pelton et al., Hall, and Kendall provide well known reasons for color anodizing an archwire and demonstrate that methods are well known for color anodizing titanium alloys. Yaholom discloses in several examples that aqueous solutions of sulfate are well known electrolytic solutions for anodizing titanium (column 9, lines 58-60; column 10, lines 5-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an aqueous solution of sulfate in the anodizing process since such a chemical has been demonstrated to be a well known and successful electrolytic solution.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orikasa et al. in view of Pelton et al., Hall, and Hixon, Jr. et al. (US 5,685,987).

Orikasa et al. discloses the stainless steel archwire as stated above, while Pelton et al. and Hall disclose that it is advantageous to anodize archwires for biocompatibility and color preferences. None of the above specifically disclose a method for anodizing stainless steel. Hixon, Jr. et al. demonstrate that it is also possible to anodize stainless steel in order to achieve colors of a cosmetic appearance (column 9, line 48 – column 10, line 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to color anodize the archwire disclosed by Orikasa et al. in order to both improve the biocompatibility of the crown and provide a variety of colors for the patient to choose from according to his/her preference.

Claims 8-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochavi (US 3,834,024) in view of Pelton et al., Hall, and Rosenfeld et al. (US 2004/0076721).

Kochavi discloses a dental crown, which mainly consists of Ni, and also to a lesser degree Cr (claim 1). Kochavi fails to disclose color anodizing any part of the dental crown. Pelton et al. and Hall disclose reason that it is advantageous to anodize metallic fixtures in the mouth for biocompatibility and color preferences. Rosenfeld et al. demonstrate that it is also well known and possible in the art to color anodize Ni and Cr (paragraph 82) to a desired color. As demonstrated before, a spectrum of colors are possible and well known in the art with color anodizing, including blue, yellow, purple, green, golden or tawny. It would have been obvious to one of ordinary skill in the art at the time of the invention to color anodize the dental crown disclosed by Kochavi, in order to both improve the biocompatibility of the crown and provide a variety of colors for the patient to choose from according to his/her preference.

Claim 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbett (US 4,722,689) in view of Pelton et al., Hall, and Hixon, Jr. et al.

Corbett discloses a dental crown, which may include a stainless steel shell, but fails to disclose a color anodizing process. Pelton et al. and Hall disclose that it is advantageous to anodize metallic oral fixtures for biocompatibility and color preferences. Hixon, Jr. et al. demonstrate that it is possible to anodize stainless steel in

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order to achieve colors of a cosmetic appearance (column 9, line 48 – column 10, line 2). As demonstrated before, a spectrum of colors are possible and well known in the art with color anodizing, including blue, yellow, purple, green, golden or tawny. It would have been obvious to one of ordinary skill in the art at the time of the invention to color anodize the stainless steel shell of the crown disclosed by Corbett in order to both improve the biocompatibility of the crown and provide a variety of colors for the patient to choose from according to his/her preference.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McGraw et al. (US 3,075,896), Weigel (US 3,346,469), White (US 6,254,383), Kelly et al. (6,095,809), Kobayashi et al. (US 5,160,599), Young (US 4,589,925), Tomita (US 4,252,620), and Farzin-Nia et al. (US 5,816,801) are made of record.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Casey Donahoe whose telephone number is (571) 272-2812. The examiner can normally be reached on Monday - Thursday (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272 -4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Casey Donahoe
Examiner
Art Unit 3732

C, D, R
2/6/06


Ralph A. Lewis
Primary Examiner
AU3732